

***Chilades galba* (LEDERER, 1855) and *Aporia crataegi* (LINNAEUS, 1758): significant contributions to the Cyprus Butterfly Recording Scheme, April/ May 2008**

(Lepidoptera, Lycaenidae and Pieridae)

by

EDDIE JOHN & XAVIER MERIT

received 4.VIII.2008

Abstract: The authors report on the finding of *Chilades galba* (LEDERER, 1855) by XAVIER MERIT near the west coast of Cyprus, suggesting that the species is more widely distributed in the region than earlier records indicated. Elsewhere, *Aporia crataegi* (LINNAEUS, 1758) was confirmed in a 10 km UTM square that fortuitously linked established breeding sites with slightly more distant locations where the species had recently appeared, indicative of further range extension for this species in Cyprus. Observations are also included on the unusually warm and dry spring experienced in Cyprus in 2008, inducing the early emergence of some species of butterfly.

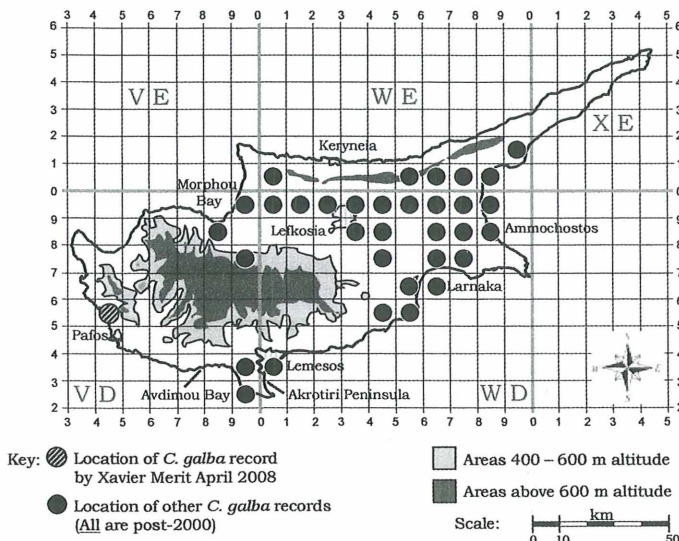
Zusammenfassung: Die Autoren berichten über den Fund von *Chilades galba* (LEDERER, 1855) durch XAVIER MERIT in der Nähe der Westküste Zyperns. Sie nehmen daher an, daß diese Art in der Region weiter verbreitet ist, als die bisherigen Funddaten vermuten ließen. Darüberhinaus werden die Funde von *Aporia crataegi* (LINNAEUS, 1758) in einem 10 km UTM-Raster eingetragen, die augenfällig die etablierten Vorkommen mit den mehr abseits gelegenen Orten verknüpfen, an denen die Art neuerdings auftrat. Auf diese Weise wird die Arealausbreitung des Baumweißlings in Zypern angezeigt und nachgewiesen.

Introduction: During 1997 and 1998, the principal author (EJ) began accumulating data on butterfly sightings (JOHN, 2000) which later developed into the Cyprus Butterfly Recording Scheme (CBRS). Early distribution maps based on UTM 10 km squares for each of the species were published in JOHN (2000) and revised in 'Butterflies of Cyprus' (MAKRIS, 2003). Nowadays, distribution maps are maintained at both 10 km and 5 km resolution, but in general this paper concentrates on the larger of the two scales. Throughout the intervening years the number of contributors to the scheme has steadily increased to 126 at the time of writing, with several resident recorders reporting periodically throughout each year. Records are also received from visitors, and among the visiting lepidopterists to Cyprus during 2008 was the co-author, XAVIER MERIT (XM) who spent two weeks on the island in late April/ early May.

Spring 2008: It was immediately obvious to XM that he had arrived during a period of drought; a lack of seasonable rain during the winter of 2007/ 2008 in Cyprus was followed by a very warm, dry spring, with serious consequences in eastern parts of the island especially. To quote ARISTOS ARISTOPHANOUS, a local lepidopterist living near Larnaka, "The vegetation in the river valleys has failed to flower, e.g. *Cistus* and even bramble have died. I cannot remember anything this bad in 20 years!"

Data provided by the Meteorological Service, Nicosia, supported anecdotal reports that the early months of 2008 were both warmer and drier than normal. Some significant variations from the norm are highlighted in Table 1. For example, at Prodromos (1380 m) the mean temperature for March was 4.4°C (66.7%) above the normal value and rainfall in April an exceptional 96.5% below normal – just 1.9 mm of rain was recorded compared with a 30-year average of 53.6 mm.

Fig. 1 *Chilades galba*: distribution within UTM 10 km squares, Cyprus



As might be expected, reports from residents and other visitors early in 2008 had already indicated that seasonal butterfly species were on the wing earlier than usual. *Euchloe ausonia* (HÜBNER, 1804) for example, which normally emerges in mid- to late February, was first observed on 2 February 2008, followed by further sightings on 9 and 11 February. *Argynnis pandora* (DENIS & SCHIFFERMÜLLER, 1775) was later recorded at Platres, Troodos Mountains, on 10 May – the earliest known date, by 21 days, for this species to be reported on the wing in Cyprus.

Observations 20 April - 2 May 2008: In view of the aforementioned, it came as no great surprise that XM also reported early sightings of some species, among them *Pseudochazara anthelea* (HÜBNER, 1825) on 23 April and *Limenitis reducta* (STAUDINGER, 1901) on 29 April.

However, by far the most notable contribution to the records was a capture of two ♂♂ of the Lycaenid *Chilades galba* (LEDERER, 1855) on 25 April – the earliest date (by eight days) reported to the CBRS. What was even more unexpected was the discovery of this species at Mavrokolympus Dam (VD45) in the far west of the island (Pafos District). This new location extends the distribution of *C. galba* (LED.) in Cyprus by approximately 50 km from the discrete colonies in the Akrotiri/ Lemesos area and a similar distance from another known site in northern Cyprus, near Morphou Bay (see Fig. 1). On receiving this report from XM, the first author

Table 1: Climatological data recorded at five Meteorological Service weather stations in Cyprus, Spring 2008.

WEATHER STATION		TEMPERATURE			PRECIPITATION		
(Altitude and UTM square)		Mean temperature for month (deg. C)	Mean temperature 1991 - 2005 (deg. C)	Monthly increase above 15 year mean (%)	Total for month (mm)	Normal values 1961 - 1990 (mm)	Monthly reduction compared with 30 year average (%)
LARNAKA	2008						
Elev: 1 m	Feb	12.2	11.8	3.4	7.9	58.0	-86.4
WD 56	Mar	16.8	13.9	20.9	2.6	39.0	-93.3
	Apr	18.8	17.1	9.9	4.9	18.0	-72.8
LEMESOS	Feb	13.2	13.1	0.8	35.5	76.3	-53.5
Elev: 8 m	Mar	17.9	15.2	17.8	25.4	49.1	-48.3
WD 03	Apr	19.7	18.0	9.4	0.4	23.5	-98.3
PAFOS	Feb	12.5	12.3	1.6	20.9	69.0	-69.7
Elev: 10 m	Mar	16.4	13.6	20.6	21.1	49.0	-56.9
VD 44	Apr	18.1	16.3	11.0	1.4	24.0	-94.2
SAITTA	Feb	8.5	n/a		60.0	111.2	-46.0
Elev: 640 m	Mar	10.9	n/a		37.7	83.3	-54.7
VD 95	Apr	14.8	n/a		1.9	47.8	-96.0
PRODROMOS	Feb	3.5	3.5	+/-	92.8	145.3	-36.1
Elev: 1380 m	Mar	11.0	6.6	66.7	50.7	120.4	-57.9
VD 86	Apr	14.1	10.7	31.2	1.9	53.6	-96.5

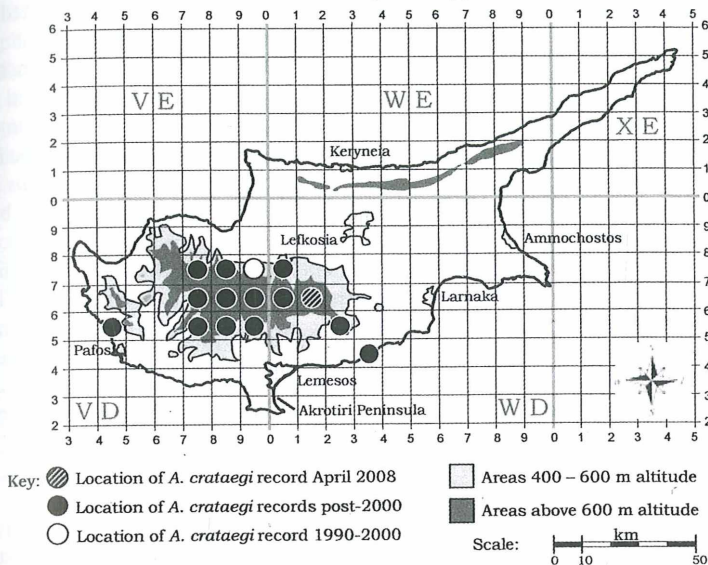
contacted a botanist friend in Cyprus, YIANNIS CHRISTOFIDES (YC), for assistance in determining the known westerly distribution of the larval hostplant, *Prosopis farcta* (Leguminosae) (syn. *Prosopis stephaniana*, *Mimosa farcta*, *Lagonychium farctum*). *P. farcta* is a common plant in Cyprus, but one that is generally restricted to cultivated and fallow fields, waste ground and roadsides of the north and east of the island. The hostplant is often found growing in open, exposed places and is well adapted to withstand drought conditions (unfortunately, it is less resistant to the increasing attention being paid by large herds of browsing goats!). YC reported that he was unaware of *P. farcta* having been found in the Pafos region and added that MEIKLI (1977) lists the species as unrecorded from 'Division 1', i.e. an area covering much of the Pafos District, with the most westerly confirmed site for *P. farcta* being on the approaches to Avdimou Bay (VD73) approximately 35 km from the area at Mavrokolympos Dam where both *C. galba* (LED.) and *P. farcta* were found by XM.

In the experience of the authors, *C. galba* (LED.) is a locally common, sedentary, lowland species, remaining in very close association with the larval hostplant (see also MAKRIS, 2003). The numerous inland records shown on the distribution map (Fig. 1) were all observed on the Mesaoria Plain or other areas up to 200 m altitude. In Cyprus, *C. galba* (LED.) can become abundant in late summer, even after long periods of drought and is often seen flying in company with *Zizeeria knysna* (TRIMEN, 1862) (pers. obs. EJ). In view of XM's discovery at Mavrokolympos Dam and taking into account the sedentary nature of *C. galba* (LED.), it seems highly likely that prior to Man's increasing influence on the region (considerable urbanization and intensification of agriculture), the species was at one time distributed throughout the lowland coastal areas from Lemesos westwards to the Pafos District and possibly eastwards to link with the colonies at Larnaka. Indeed, the finding at Mavrokolympos Dam opens up the real possibility that isolated colonies have yet to be discovered, especially along the south-west coast. If *P. farcta* is still present in the vicinity of Avdimou it is highly probable that a search will also reveal the presence of *C. galba* (LED.), thereby lending support to the hypothesis that the species once was widespread in the region. As a cautionary note, however, it is worth mentioning that the site at Mavrokolympos Dam probably represents the westernmost extent of the species' range, both in Cyprus and in the Mediterranean, and it will be noted from Fig. 1 that *C. galba* (LED.) has a much increased distribution in the more arid east of the island. Although conjectural, it follows that the likelihood of there being a significant, undetected presence throughout the west of Cyprus is therefore small. In the wider region, *C. galba* (LED.), described by LARSEN (1984) as a "strict Eastern Eremic", is known from the Cilician coast of south-eastern Turkey (HESSELBARTH et al., 1995) approximately 120 km north of the established colonies in north-eastern Cyprus. However, all known Turkish locations for this species are further to the east than those of Cyprus.

The Pierid *Aporia crataegi* (LINNAEUS, 1758) is locally common within a restricted area of the Troodos Mountains, generally above 800 m, with only two confirmed records from lowland sites. At one of these sites near Coral Bay (VD45 - see Fig. 2) another visitor observed two *A. crataegi* (L.) on 12 April 2008 flying around *Hibiscus* for one to two minutes and raised the possibility with EJ that they might have been migrants. The recorder added that while on holiday in Lesbos he had seen migrants of this species flying in off the sea (G. GAVAGHAN, unpublished data). Whether or not the Cyprus *A. crataegi* (L.) observations were migrants remains unknown, as there were no other reports received of migrant activity involving this (or any other) species

at the time, other than an earlier, unconfirmed sighting of *A. crataegi* (L.) in VD45 on 12 March 2008 – a date so far in advance of substantive phenology for this species in Cyprus that it inevitably brings into question acceptance of the record.

Fig. 2 *Aporia crataegi*: distribution within UTM 10 km squares, Cyprus



During XM's visit to Cyprus, *A. crataegi* (L.) was seen at three sites. At one of these, in the Diarizos Valley (300 m) on 1 May, XM's observation extended coverage into a new 5 km square within the larger square of VD75. Even more importantly, a sighting of ♂♂ and ♀♀ of *A. crataegi* (L.) near Farmakas (WD16) on 26 April provided a further significant addition to the distribution map for this species. These sightings, at an altitude of 1000 m, were in a previously unrecorded square on the eastern fringe of the established distribution for *A. crataegi* (L.) in Cyprus. This is of particular interest because on 8 April 2002, EJ had observed a single *A. crataegi* (L.) at a very unusual (coastal) location in WD34, remote from the known breeding areas above 800 m (see text and earlier distribution map in MAKRI, 2003). A little over four years later, on 1 May 2006, Benoît Méry, a visiting French biologist, observed three *A. crataegi* (L.) near Lefkara, at an altitude of 650 m, in another 'new' 10 km square (WD25) immediately north-west of the coastal site in WD34. Moving on a further two years, XM's record completes the diagonal link with the previously established breeding sites in the Troodos Mountain range. This extended distribution is probably explained by local topography, as valleys and rivers run in a south-easterly direction linking mountains to the coast and so providing a suitable dispersal corridor. In Asian Russia, KORSHUNOV & GORBUNOV (1995) state that *A. crataegi* (L.) "migrate actively, some specimens penetrating into montane and lowland tundras." However, LARSEN (1974) expresses the view that in nearby Lebanon *A. crataegi* (L.) "will not tolerate the humidity

of the lower western slopes” and it is very likely that the species would behave similarly in Cyprus, where humidity levels are frequently very high at coastal regions. Of course, one also has to acknowledge that any such movement within Cyprus involves distances which, by comparison with mainland countries, are rather insignificant. The distance from the Lefkara site to that at the coastal site in WD34 is little more than 14 km for example.

That other species use natural dispersal corridors was memorably demonstrated in April 2001, when a huge migration of *Vanessa cardui* (LINNAEUS, 1758) was observed at many points throughout Cyprus, flying inland using such routes. In a spectacularly large migration, not since repeated in the eastern Mediterranean region, many millions of *V. cardui* (L.) passed through the island in a northerly or north-westerly direction on a bearing towards Turkey (JOHN, 2001).

As shown in Fig. 2, it is of interest to note that *A. crataegi* (L.) has yet to be reported from northern Cyprus. MEIKLE (1977) lists the presence of the hostplant *Crataegus azarolus* (Rosaceae) on the south-west slopes of the Pentadaktylos Mountains in the north, but notes that it is not widespread. MEIKLE also states that *Crataegus monogyna*, which is yet to be confirmed as a hostplant in Cyprus, is absent from the north. VINEY (1994), does not agree and lists both *Crataegus* spp. for the northern region of the island, indicating that they are present: “here and there, in the hills above Kerynia and Lapithos.” Were any *A. crataegi* (L.) to be found in the Pentadaktylos Mountains of the north, it would seem unlikely that they had their origins in the populations of the Troodos Mountains, as natural dispersal corridors disappear once the inhospitable terrain of the Mesaoria Plain is reached – a barrier, however, that is traversed with ease by determined migrants.

Chilades galba (LEDERER, 1855): a request for records...

Should any reader be aware of any records of *C. galba* (LED.) or its hostplant *P. farcta* from the south-west of Cyprus (or, indeed, from areas outside the range shown on the distribution map) the principal author would appreciate details, please. Indeed, any records of butterfly observations from Cyprus would be welcomed.

Acknowledgements: The authors wish to thank NIGEL COTTLE for reporting *Euchloe ausonia* (HÜBNER, 1804) observations; YIANNIS CHRISTOFIDES for the early *Argynnis pandora* (DENIS & SCHIFFERMÜLLER, 1775) observation and also for assistance with botanically-related enquiries; BENOÎT MÉRY, GRAHAM GAVAGHAN and EDDIE HARDING for the *Aporia crataegi* (LINNAEUS, 1758) reports and DAVID WHALEY and JUDY DAWES for field assistance. Our appreciation is also extended to ULF EITSCHBERGER for providing a German translation of the Abstract.

References

- HESELBARTH, G., OORSCHOT, H. VAN & S. WAGENER (1995): Die Tagfalter der Türkei unter Berücksichtigung der angrenzenden Länder 1-3. - Eigenverlag. P. Dr. S. WAGENER, Bocholt.
- KORSHUNOV, Y. & P. GORBUNOV (1995): Dnevnye babochki aziatskoi chasti Rossii. Spravochnik. (Butterflies of the Asian part of Russia. A handbook). Ural University Press, Ekaterinburg.

202 pp. [in Russian] (Extract taken from the translated version at <http://pisum.bionet.nsc.ru/kosterin/korgor/index.htm>)

- JOHN, E. (2000): Butterflies of Cyprus 1998 (Records of a year's sightings). - AES., Pamphlet No. 15.
- JOHN, E. (2001): Migration of *Vanessa cardui* (L.) (Lep.: Nymphalidae) through Cyprus, March 2001. - Ent. Rec.J. Var. **113**: 269–281, Brentwood.
- LARSEN, T. B. (1974): Butterflies of Lebanon. - Beirut.
- LARSEN, T. B. (1984): The Zoogeographical Composition and Distribution of the Arabian Butterflies (Lepidoptera; Rhopalocera). - J. Biogeogr. **11** (2): 119-158, Oxford.
- MAKRIS, C. (2003): Butterflies of Cyprus. - Bank of Cyprus Cultural Foundation, Nicosia.
- MEIKLE, R. D. (1977): Flora of Cyprus **1**. - London.
- VINEY, D. E. (1994): An illustrated Flora of North Cyprus. - Koenigstein.

Addresses of authors

EDDIE JOHN
Davies Cottage
Penllyn, Cowbridge
Vale of Glamorgan
CF71 7RQ, UK
eddie@grayling.dircon.co.uk
Butterfly Recording Scheme for Cyprus:
<http://www.grayling.dircon.co.uk/index.html>

DR. XAVIER MERIT
51, rue Galliéni
F-91120 Palaiseau
France
merit_x@yahoo.com